

IITGn holds talk on efficiency of solar cells

Eminent researcher Sang IL Seok shared details about his work

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Eminent researcher in the field of solar PV, Sang IL Seok, spoke on ways of improving efficiency of solar cells at Indian Institute of Technology, Gandhinagar (IITGn) on Monday. Seok's talk on 'Architecture, Process and Materials for Efficient Inorganic-Organic Hybrid Solar Cells' was the third edition of IITGn's 'Roddam Narasimha Distinguished Lecture' series.

During the talk, Seok said that efficiency of solar PV cells could be improved either by choosing the best semiconductor material or by engineering the chemical property of existing materials.

Seok, who leads the Global Research Laboratory at Korea Research Institute of Chemical Technology (KRICT) as research fellow in the division of



Sang IL Seok

advanced materials, shared details about his research. He said, "Of the various available materials and methodologies aimed at producing low-cost and efficient photovoltaic cells for utilising solar energy, semiconductor nanocrystals and inorganic-organic hybrid perovskites offer promise of a breakthrough for next-generation solar devices. This is mainly due to the combination of superior optical properties with suitability for solution-

based processing."

Stimulated by ambitions for fabricating stable, high-efficiency, and cost-effective solar cells, Seok and his group have been studying inorganic-organic heterojunction solar cells by employing inorganic semiconductor nanoparticles or inorganic-organic hybrid perovskite materials as light absorbers and organic hole conductors.

Seok said, "In the perovskite solar cells, process and chemical engineering has enabled the production of extremely uniform and dense layers, with remarkably improved performance of the cells with certified power conversion efficiency (PCE) of 20.1% in the laboratory conditions."

'Roddam Narasimha Distinguished Lecture', which was set up in 2012, aims at bringing young distinguished professionals to the institute to present their works in areas of national importance. The lecture series was introduced with the support of professor Amrutur Anilkumar from Vanderbilt University.